

colour. Inferior wings of a light semitransparent silvery hue, with a deep marginal fringe. Thorax similar in colour to anterior wings and not crested. Abdomen yellowish; the entire of the under side light silvery grey. The wings are slightly convoluted in repose.

Antennæ (fig. 5, magnified portion) rather short, setaceous, and scaly above.

Labial palpi (figs. 6 & 7, denuded), 3-jointed, covered with feathery scales. Basal and terminal joints nearly equal, and each about one half the length of the middle one. The whole cylindrical and terminating in a point, and bending upwards and forwards to about level with the top of the eye.

The legs.—Anterior pair (fig. 8) small and spurless. Tibiæ half the length of the femora. Second pair (fig. 9), two spurs at ends of tibiæ. Posterior pair (fig. 10), four spurs. The second and posterior legs are long, and nearly equal to each other. The whole of the legs are closely covered with feathery scales, thicker however, and intermixed with some hairs on the tibiæ of posterior pair. Tarsi in all 5-jointed (first joint about equal to remaining four) terminating in small claws.

8. DESCRIPTION OF A SPECIES OF PERGA, OR SAW-FLY, FOUND FEEDING UPON THE EUCALYPTUS CITRIODORA OF HOOKER, OR WIDE BAY LEMON-SCENTED GUM-TREE. BY DR. GEORGE BENNETT, OF SYDNEY, F.Z.S., AND A. W. SCOTT, ESQ., MEMBER OF THE LEGISLATIVE ASSEMBLY OF NEW SOUTH WALES.

(Annulosa, Pl. LXII.)

Among numerous *Eucalypti* or Gum-trees growing in great profusion in New South Wales, a species, named *Eucalyptus citriodora* by Sir William Hooker, is peculiar to the Wide Bay district at the northern part of the Colony. It is a tree of graceful and elegant growth, and assumes a picturesque character and appearance devoid of stiffness; and as the younger branches become elongated towards the top, they gradually yield and become partially pendent. It bears delicate white flowers in clusters, which attract by the honey secreted within them numerous insects and honey-eating birds. The foliage affords food to the larvæ of many insects, which sometimes appear in such myriads as to denude the tree; and the flowers are the resort of a great variety of Coleopterous and other insects. This tree has a great claim to picturesque beauty, and proves an ornament to any landscape when seen growing in its native soil. It does not produce timber of any great size, nor am I aware of its being used for any particular purpose. At Wide Bay it has been known to attain the height of from 80 to 95 feet, with a circumference of from 8 to 10 feet. It has recently been introduced into the Botanic Garden at Sydney, from the Wide Bay district, and has been found to be of quick growth. My friend Mr. C. Moore, the Director of the

Botanic Garden at Sydney, informs me that a tree now in that garden was planted about six years since ; and I found it had in that time attained the height of 35 feet ; but the top of the tree having been cut off at an early period of its growth, it had divided into several branches. This had retarded its growth as far as regards elevation, although (as was the intention) it had promoted the extension of its branches : and, but for this circumstance, it might have been expected that by this time the tree would have attained the elevation of about 60 or 65 feet. The leaves of this species of *Eucalyptus*, on being bruised, yield a delightful citron-like odour, compared by some to the smell of balm, and by others to the scent called Citronella ; and when the leaves are dried and placed among clothes or papers, they impart an agreeable scent to them. Considering that it might prove useful in an economical point of view, I procured a quantity of the leaves, which were distilled by Mr. Norie, a practical chemist in Sydney ; and it was found that three pounds twelve ounces weight of the leaves yielded by distillation six drachms and a half of a pure colourless oil. A very small number of drops of the oil (about eight), to an ounce of spirit, produce a very powerful and agreeable perfume, approximating to that known as Citronella, which may be called "Essence of Lemon-scented Gum-tree." I sent some of this oil in its pure state to Sir William Hooker, through my friend Dr. F. Müller of Melbourne, to be placed in the Museum of Economic Botany. When the outer bark of the tree was hanging in strips upon the trunk and branches, as is usual with the *Eucalypti*, the new bark underneath was of a delicate greenish white colour. A red gum exudes from this tree. As this tree may eventually prove of great utility in affording perfume, every exertion will be made to propagate it in the neighbourhood of Sydney, and being of rapid growth it will, no doubt, quickly succeed. About September I observed a gregarious Caterpillar feeding upon the foliage of this tree and rapidly destroying it. On a closer inspection I found the larvæ of a species of *Perga* or Saw-fly, huddled together both on the upper and under sides of the leaves, arranged for the most part in regular rows. When disturbed, they simultaneously bent their bodies in the form of an arch, and emitted a greenish fluid from their mouths, as if to intimidate the intruder, forming, on a small scale, a representation of an angry cat when a dog approaches her lair. When put into a box, the larvæ emitted so powerful an odour of the leaves on which they had been feeding, as to scent the room in which they were placed. The larva of the *Perga* is evidently an omnivorous feeder, as it has been observed upon several species of the *Eucalyptus* as well as on the *Callistemon*. On showing the larva to my friend A. W. Scott, Esq., of Ash Island, he informed me that he had made drawings and magnified dissections of this and other species. In a few days I received the accompanying description of this species, together with the beautiful and accurate drawing (copied in Pl. LXII.) by his daughter, Miss H. Scott.

Family SECURIFERA.

Tribe 1. TENTHREDINETÆ (Saw-flies).

Genus PERGA (Leach).

PERGA EUCALYPTI, sp. nov. ? (Pl. LXII.)

These larvæ are gregarious, and live exposed on the leaves of the *Eucalyptus*, on which they feed, and when full-grown attain a considerable size, from 2 inches to $2\frac{1}{4}$. Of a uniform velvety black, with numerous short stiff white hairs, they bear a general resemblance to Lepidopterous Caterpillars, easily discernible however by the possession of only six squamous feet, and these large, powerful and reddish.

Living, as they do, in considerable numbers, huddled together and even one upon another, on the upper as well as the under side of the leaf, they present so striking an object, that the most unobservant must easily recognize the group of larvæ depicted in our plate.

We may also add, that during their repast these pseudo-caterpillars keep slowly moving their abdominal portions, rapping their extremities against the leaves, and, if disturbed, arching their bodies in a menacing manner, and emitting from their mouths a viscid matter.

Our larvæ buried themselves underground in October, forming cocoons of a very strong, brownish texture. The perfect insect appeared in the following March, and measured in expanse of wings $1\frac{7}{8}$ inch, the length of the body being $\frac{1}{2}$, of which the head and thorax constituted $\frac{4}{12}$.

Fig. 1. The head magnified.

Fig. 2. Antennæ. These are short, 6-jointed, the last joint longest and clubbed; the whole of a yellow colour.

The legs: anterior pair two spurs on tibiæ; second and posterior (fig. 3) have similar spurs, with an additional moveable spine on the middle of their inferior side; the tarsi are 5-jointed, the first four furnished with pairs of blunted appendages, with large pulvilli between, the ultimate one terminated by strong claws.

Fig. 4. Anterior wing. This has four cubital cells, the second and third of which receive a recurrent nervure, the transverse nervures of the disc; but the radial cell is not appendiculated.

Fig. 5. Posterior wing.

The wings of the live insect are brownish inclining to bronze, but in the cabinet these soon assume a shabby and ragged appearance. Head and thorax have a metallic dark green-red lustre. Abdomen bright shining green; three large orange-yellow patches on the upper side, one at each base of wings, and one over junction of thorax and abdomen; underneath similar patches immediately below and between the legs.

We have other species of this genus in our possession, exhibiting considerable variations in their larvæ, as to size, colouring, and markings; but they are all uniformly supplied with only six powerful squamous feet.

The *Eucalyptus*, *Melaleuca* and *Callistemon* appear to afford the principal food for the *Pergæ*.

The habits of the Saw-flies are so well described by Latreille, Leach, and others, that it is quite unnecessary for us to make further comments; and it has been to the larvæ of a species which may be considered the type of the genus, that we have principally devoted our attention in this short sketch.

The *Tenthredinetæ* are represented by numerous examples in this colony, and are well deserving of a memoir devoted exclusively to their family, as many others, in addition to the *Pergæ*, may be found worthy of being formed into separate and distinct genera.

The following list of additions to the Society's Menagerie by presentation and purchase during the month of May was read:—

1 Axis Deer	<i>Axis maculata</i>	Presented by Richard Ansdell, Esq.
1 Gannet	<i>Sula bassana</i>	Presented by T. W. Foster, Esq.
1 Australian Thick-knee	<i>Edicnemus australis</i>	Purchased.
2 Mooruks	<i>Casuaris bennettii</i>	Presented by Dr. Bennett, F.Z.S.
4 Hippocampi	<i>Hippocampus brevirostris</i> ...	Presented by T. F. Pinto, Esq.
15 Green Lizards	<i>Lacerta viridis</i>	Presented.
1 African Civet	<i>Viverra civetta</i>	Presented by Captain R. Hughes.
1 Kangaroo	<i>Petrogale penicillata</i>	Purchased.
2 Tachard Buzzards ...	<i>Buteo tachardus</i>	Purchased.
1 Red-capped Parrakeet	<i>Platycercus pileatus</i>	Purchased.
1 Love Parrakeet.....	<i>Agapornis pullaria</i>	Purchased.
5 Wax-wings	<i>Ampelis garrula</i>	Purchased.
1 Grivet Monkey.....	<i>Cercopithecus engyithia</i> ...	Presented by B. J. Angell, Esq.
1 Barred Ichneumon ...	<i>Herpestes fasciatus</i>	Presented by R. F. Burton, Esq., F.R.G.S.
1 Boa	<i>Boa constrictor</i>	Presented by G. Furness, Esq.
2 Chinese Pheasants ...	<i>Phasianus torquatus</i>	Presented by Geo. Moss, Esq.
2 Pr. Albert's Curassow	<i>Crax alberti</i>	Purchased.
8 Water Tortoises	<i>Emys</i> — ?	} Presented by Rev. R. T. Lowe, Corr. Memb.
4 Land Tortoises.....	<i>Testudo</i> — ?	
1 Paradoxure	<i>Paradoxurus typus</i>	Presented by Sir D. Baird.
1 Flying Phalanger	<i>Belideus flaviventris</i>	Presented by Dr. Bennett, Corr. Memb.
1 Capuchin Monkey ...	<i>Cebus</i> — ?	Presented.

Of these, the *Hippocampus brevirostris*, *Buteo tachardus*, and *Belideus flaviventris* were stated to be exhibited for the first time.